



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,885	10/20/2000	Kenneth R. Owens	069116.0169	6112
5073	7590	04/01/2005	EXAMINER	
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			KADING, JOSHUA A	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/692,885	Applicant(s) OWENS ET AL.	
	Examiner Joshua Kading	Art Unit 2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-24 is/are rejected.
7) ☒ Claim(s) 7 and 11 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2-3-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 7 and 11 are objected to because of the following informalities:

Regarding claim 7, line 1 seems to state that claim 7 depends from "claim I". This
5 should be changed to reflect that claim 7 actually depends from claim 1.

Regarding claim 11, line 20 states, "a switch status method". It is believed
applicant intended this to be a message and not a method. Therefore, "a switch status
method" should be changed to --a switch status message--.

Appropriate correction is required.

10

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

15

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negated by the manner in which the invention was made.

20

Claims 1, 3-9, 11, 13, 14, and 17-23 are rejected under 35 U.S.C. 103(a) as
being unpatentable over U.S. Patent 5,138,615, Lamport et al. (Lamport) in view of U.S.
Patent 6,167,025, Hsing et al. (Hsing).

25

Regarding claims 1 and 11, Lamport discloses, "in a data network comprised of a
plurality of data switches interconnected to form a plurality of data paths forming a mesh

configuration of data switches, a method of re-routing data messages around a data switch comprised of the steps of:

receiving (and thus sending) at least a first data message over a first data path sent from a first switch to a second switch (figure 2; col. 1, lines 21-32 where any one of

5 the switches acts as a first switch and the receiving switch acts as the second switch);

sending said first data message from said second switch to a third switch (figure 2; col. 1, lines 21-32 where any one of the switches acts as the second switch and the receiving switch acts as the third switch);

receiving at said second switch one or more switch status messages indicating
10 the functionality of said third data switch (col. 37, lines 15-48 where the keep-alive messages are status messages used to indicate the functionality of a given switch);

inhibiting generation of a switch status messages at said second switch upon not receiving said switch status messages at said second switch from said third switch (col. 37, lines 42-57 where if it is determined the link is DEAD, then there will be no more
15 keep-alive messages sent)."

However, Lamport lacks what Hsing discloses, "wherein inhibiting generation of a switch status message at said second switch initiates redirection of subsequent data messages away from said second and third switches via a second data path through said data network (col. 14, lines 46-58 where clearly if there is a switch that has not
20 necessarily failed but is in the failed path, that switch will be avoided)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the re-directing of data messages with the rest of the method for the

Art Unit: 2661

purpose of restoring virtual connections in a faulty switched network (Hsing, col. 4, lines 21-24). The motivation for restoring the virtual connections is so that users currently involved in communication will not have that communication interrupted if a failure occurs, the integrity of the connection will be maintained until the communication is
5 complete.

In regard to claims 3 and 13, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "said data switches are asynchronous transfer mode switches." Hsing however, further discloses "said data switches are asynchronous
10 transfer mode switches (figure 1)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the ATM switches with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 4 and 14, Lamport and Hsing disclose the method of claims 1
15 and 11. However, Lamport and Hsing lack "said data switches are IP routers." Although Lamport and Hsing disclose ATM switches and not IP routers, it would have been obvious to one with ordinary skill in the art at the time of invention to choose IP routers instead of ATM switches because the choice is dependent on the type of network the switches operate in. If it is an ATM network, the switches need to be able to handle
20 ATM traffic; and if the network is IP, the routers need to be able to handle IP traffic. Thus the choice of IP routers versus ATM switches is a matter of design choice. The

motivation for choosing IP routers is to ensure the routers work properly within their network.

In regard to claims 5 and 17, Lamport and Hsing disclose the method of claims 1
5 and 11. However, Hsing lacks "said switch status messages are comprised of a
predetermined format, [that of a] switch liveness message." Lamport however, further
discloses "said switch status messages are comprised of a predetermined format, [that
of a] switch liveness message (col. 37, lines 15-48 where the ACK messages are the
status messages and it is known in the art that ACK messages have a predetermined
10 format; an ACK message is the functional equivalent of a liveness message because it
allows the receiving switch to know that there isn't a failure in the link of the sending
switch)." It would have been obvious to one with ordinary skill in the art at the time of
invention to include the predetermined format message with the method of claims 1 and
11 for the same reasons and motivation as in claims 1 and 11.

15

In regard to claims 6 and 18, Lamport and Hsing disclose the method of claims 1
and 11. However, Lamport lacks "at least one of said switches maintains a table of
incoming link and path identifiers and of outgoing link and path identifiers." Hsing
however, further discloses "at least one of said switches maintains a table of incoming
20 link and path identifiers and of outgoing link and path identifiers (figures 2, 3A, 3B, and
3C where element 212 will contain information on the incoming and outgoing calls which
will contain path identifiers as seen in figures 3A, 3B, and 3C)." It would have been

obvious to one with ordinary skill in the art at the time of invention to include the link table with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

5 In regard to claims 7 and 19, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "said first data message represents speech information." Hsing however, further discloses "said first data message represents speech information (col. 3, lines 8-10 represent some of the types of communications that can benefit from the fault protection system, teleconferencing (which includes
10 voice) can be one of those options)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the speech information with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

 In regard to claims 8 and 20, Lamport and Hsing disclose the method of claims 1
15 and 11. However, Lamport lacks "said first data message represents computer data." Hsing however, further discloses "said first data message represents computer data (col. 3, lines 8-10 represent some of the types of communications that can benefit from the fault protection system, World Wide Web applications is computer data)." It would have been obvious to one with ordinary skill in the art at the time of invention to include
20 the computer data with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 9 and 21, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "sending subsequent data messages to a fourth data switch (col. 14, lines 44-46 implying that in a communication system the only way to determine which switch failed is to communicate the information by sending messages
5 between switches, which can include a third data switch)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the re-directing to a third switch with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

10 In regard to claim 23, Lamport discloses "in a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, a method of re-routing data messages around a data switch comprised of the steps of:

15 sending at least a first data message over a first data path from a first switch to a second switch (figure 2; col. 1, lines 21-32 where any one of the switches acts as a first switch and the receiving switch acts as the second switch);

sending said at least first data message from said second switch to a third switch (figure 2; col. 1, lines 21-32 where any one of the switches acts as the second switch and the receiving switch acts as the third switch);

20 sending a switch status message to at least one of said first and second switches (col. 37, lines 15-48 where the keep-alive messages are status messages used to indicate the functionality of a given switch)..."

However, Lamport lacks what Hsing discloses, "in response to not receiving said first data message from said first switch, said switch status message initiating redirection of subsequent data messages away from said second and third switch via another data path through said data network (col. 14, lines 46-58 where the detecting of a switch failure must include notification of the failure to all switches of the failed path which, as read, initiates the re-directing sequence)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the re-directing of data messages with the rest of the method for the purpose of restoring virtual connections in a faulty switched network (Hsing, col. 4, lines 21-24). The motivation for restoring the virtual connections is so that users currently involved in communication will not have that communication interrupted if a failure occurs, the integrity of the connection will be maintained until the communication is complete.

Claims 2, 10, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport and Hsing as applied to claims 1, 11, and 23 above, and further in view of McGill (U.S. Patent 5,436,886).

In regard to claims 2 and 12, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport and Hsing lack "said alternate data path is a protection path through said network." McGill however, discloses "said alternate data path is a protection path through said network (figure 5, where the primary path from SF0 is

Art Unit: 2661

broken, thus the protection path from SF1 is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the method of claims 1 and 11 for the purpose of having an alternate path should the primary path not transmit or fail. The
5 motivation being increased reliability in data transmission.

In regard to claims 10 and 24, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport and Hsing lack "said first data switch is a protection switch element." McGill however, discloses "said first data switch is a protection switch element
10 (figure 5, where the primary switch, SF0, is no longer able to transmit data, therefore the protection switch SF1 is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the method of claims 1 and 11 for the purpose of having an alternate path should the primary path not transmit or fail. The motivation being
15 increased reliability in data transmission.

In regard to claim 2, Lamport and Hsing disclose "the data network of claim 1". However, both Lamport and Hsing lack what McGill discloses, "said alternate data path is a protection path through said network (figure 5, where the primary switch, SF0, is no
20 longer able to transmit data, therefore the protection switch SF1 is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the method of

claims 1 and 11 for the purpose of having an alternate path should the primary path not transmit or fail. The motivation being increased reliability in data transmission.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable
5 over Lamport and Hsing as applied to claim 11 above, and further in view of Shew et al.
(U.S. Patent 6,530,032 B1).

In regard to claim 15, Lamport and Hsing disclose the method of claim 11.
However, Lamport and Hsing lack "said data switches are digital cross connect switches
10 controlled by MPLS." Shew however, discloses "said data switches are digital cross
connect switches controlled by MPLS (col. 2, lines 8-11 where electrical is taken to be
digital; col. 2, lines 28-32 identifies the MPLS controller)." It would have been obvious to
one with ordinary skill in the art at the time of invention to include the digital switches
and MPLS control with the method claim 11 for the purpose of re-routing data with
15 greater ease. The motivation being shorter delays in re-routing data when failures occur
(col. 1, lines 19-28; col. 5, lines 31-36).

In regard to claim 16, Lamport and Hsing disclose the method of claim 11.
However, Lamport and Hsing lack "said data switches are optical cross connects and
20 switches controlled by MPLS." Shew however, discloses "said data switches are optical
cross connects and switches controlled by MPLS (col. 2, lines 8-11; col. 2, lines 28-32
identifies the MPLS controller)." It would have been obvious to one with ordinary skill in

Art Unit: 2661

the art at the time of invention to include the optical switches and MPLS control with the method claim 11 for the purpose of re-routing data with greater ease. The motivation being shorter delays in re-routing data when failures occur (col. 1, lines 19-28; col. 5, lines 31-36).

5

Response to Arguments

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

10 Applicant's arguments filed 3 February 2005 have been fully considered but they are not persuasive. Regarding claims 22 and 23, applicant argues that Hsing does not disclose, "a capability for the first switch to send a status message to an upstream switch to initiate redirection of subsequent data messages onto an alternate data path." The examiner respectfully disagrees.

15 Applicant uses the term "upstream" as part of the arguments against the use of Hsing regarding the claims in question. However, none of the claims contain any mention of stream direction, let alone an upstream direction, in which messages are sent. Therefore, Hsing fully reads on applicant's claims as written.

20 Further, assuming the term "upstream" were part of the claim language, Hsing would still read on the claimed invention. In col. 14, lines 58-64, Hsing indicates sending redirection messages downstream so that switches may use this information to alter existing routing tables. Although the redirection information is sent downstream, one of

ordinary skill in the art would recognize that sending the information upstream would be an obvious expedient of sending the information downstream. The reason being that if information can be sent in one direction in a communication system, it can be sent in the other direction (and even both directions). And the direction the information is sent is
5 dependent on the design of the system (e.g., tree structure, ring topology, etc.) and therefore is a matter of design choice.

Conclusion


Applicant's amendment necessitated the new ground(s) of rejection presented in
10 this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE**
MONTHS from the mailing date of this action. In the event a first reply is filed within
15 **TWO MONTHS** of the mailing date of this final action and the advisory action is not
mailed until after the end of the **THREE-MONTH** shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
20 than **SIX MONTHS** from the date of this final action.

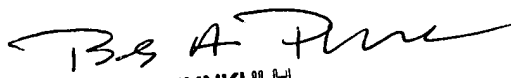
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (571) 272-3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joshua Kading
Examiner
Art Unit 2661

15
March 24, 2005


BOB PHUNKULH
PRIMARY EXAMINER